Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended):

A biosensor device which comprises:

a strip of a substrate having at least two zones wherein a

(1) first of the zones contains a first capture reagent bound to the substrate in a defined area between electrodes on different sides of the defined area for providing an electrical bias to the defined area; and

(2) a second of the zones containing a fluid transfer medium for supplying a fluid to the first zone, wherein the second zone comprises a second defined area containing a second capture reagent directly bound to an electrically conductive polymer formed by oxidative polymerization of monomers and the polymer has been mixed to react with the second capture reagent to form a conjugate, wherein there is an absence of electrically conductive particles, wherein when a fluid sample

containing an analyte is bound by the second capture reagent to form a complex, the complex migrates to the first zone in the medium and the analyte is bound by the first capture reagent thereby altering a conductivity or resistance of the defined area in the first zone as measured between the electrodes to detect the analyte.

2. (Original):

The device of Claim 1 wherein the device further comprises a third zone adjacent to the first zone into which the fluid is absorbed after passing through the first defined area of the first zone.

3. (Original):

The device of any one of Claims 1 or 2 wherein the first defined area has a dimension between the electrodes of 1.0 mm or less.

Claims 4-6 (Cancelled).

7. (Currently Amended):

A system for detecting an analyte in a fluid sample which comprises:

(a) a biosensor device which comprises:

a strip of a substrate having at least two zones wherein a

(1) first of the zones contains a first capture reagent bound to the substrate in a defined area between electrodes on different sides of the defined area for providing an electrical bias to the defined area; and

(2) a second of the zones containing a fluid transfer medium for supplying a fluid to the first zone, wherein the second zone comprises a second defined area containing a second capture reagent directly bound to an electrically conductive polymer formed by oxidative polymerization of monomers and the polymer has been mixed to react with the second capture reagent to form a conjugate, wherein there is an absence of electrically conductive particles, wherein when a fluid sample containing an analyte is bound by the second capture reagent to form a complex, the complex migrates to the first zone in the medium and the analyte is bound by the

first capture reagent thereby altering a conductivity or resistance of the defined area in the first zone as measured between the electrodes;

(b) electrical means for supplying an electrical bias between the electrodes; and

(c) measuring means for determining a change in the conductivity or resistance of the first area before and after application of the sample in the second zone to detect the analyte.

8. (Currently Amended):

A biosensor device which comprises:

a strip of a substrate having at least two zones wherein a

(1) first of the zones contains a first antibody bound to the substrate in a defined area between electrodes on different sides of the defined area for providing an electrical bias to the defined area; and

(2) a second of the zones containing a fluid transfer medium for supplying a fluid to the first zone, wherein the second zone comprises a second defined area containing a second antibody directly bound to an

electrically conductive polymer formed by oxidative polymerization of monomers and the polymer has been mixed to react with the second capture reagent to form a conjugate, wherein there is an absence of electrically conductive particles, wherein when a fluid sample containing an antigen enters the second defined area of the second zone, the antigen is bound by the second antibody which is bound to the conductive polymer to form a complex, the complex migrates to the first zone in the medium and the antigen is bound by the first antibody thereby altering a conductivity or resistance of the defined area in the first zone as measured between the electrodes to detect the antigen.

9. (Original):

The device of Claim 8 wherein the device further comprises a third zone adjacent to the first zone into which the fluid is absorbed after passing through the first defined area of the first zone.

10. (Original):

The device of any one of Claims 8 or 9 wherein

the first defined area has a dimension between the electrodes of 1.0 mm or less.

Claims 11-13 (Cancelled).

14. (Currently Amended):

A system for detecting an antigen in a fluid sample which comprises:

(a) a biosensor device which comprises:

a strip of a substrate having at least two zones wherein a

(1) first of the zones contains a first antibody bound to the substrate in a defined area between electrodes on different sides of the defined area for providing an electrical bias to the defined area; and

(2) a second of the zones containing a fluid transfer medium for supplying a fluid to the first zone, wherein the second zone comprises a second defined area containing a second antibody directly bound to an electrically conductive polymer formed by oxidative polymerization of monomers and the polymer has been mixed to react with the second capture reagent to form a

conjugate, wherein there is an absence of electrically conductive particles, wherein when a fluid sample containing an antigen enters the second defined area of the second zone, the antigen is bound by the second antibody which is bound to the conductive polymer to form a complex, the complex migrates to the first zone in the medium and the antigen is bound by the first antibody thereby altering a conductivity or resistance of the defined area in the first zone as measured between the electrodes;

(b) electrical means for supplying an electrical bias between the electrodes; and

(c) measuring means for determining a change in the conductivity or resistance of the first area before and after application of the sample in the second zone to detect the antigen.

15. (Previously Presented):

The system of Claim 14 wherein the device further comprises a third zone adjacent to the first zone into which the fluid is absorbed after passing through the first defined area of the first zone.

16. (Previously Presented):

The device of Claim 1 or 2 wherein a third zone adjacent to the second zone is provided for applying the fluid sample containing the analyte prior to being introduced into the second zone.

Claim 17 (Cancelled).

18. (Previously Presented):

The system of Claim 7 or 8 wherein a pad adjacent to the second zone is provided for applying the fluid sample containing the analyte prior to being introduced into the second zone.

19. (Previously Presented):

The device of Claim 8 or 9 wherein a pad adjacent to the second zone is provided for applying the fluid sample containing the analyte prior to being introduced into the second zone.

Claim 20 (Cancelled).

21. (Previously Presented):

The system of Claim 14 or 15 wherein a pad adjacent to the second zone is provided for applying the fluid sample containing the analyte prior to being introduced into the second zone.

22. (Currently Amended):

The device of Claim 1 or 2 ~~with multi-array detection~~, wherein the biosensor device is ~~as a multiple array~~ a multi-array device comprising:

a plurality of first zones on the single strip of substrate, each of the first zones having a first capture reagent with a different specificity bound to the single strip of substrate between electrodes to immobilize one of multiple analytes on the single strip of substrate so that each of the multiple analytes can be detected simultaneously from the same sample on the single strip of substrate of the multi-array biosensor device.

Claim 23 (Cancelled).

24. (Currently Amended):

The device of Claim 8 or 9~~ with multi-array detection~~, wherein the biosensor device is ~~as a multiple array~~ a multi-array device comprising:

a plurality of first zones on the single strip of substrate, each of the first zones having a first capture reagent with a different specificity bound to the single strip of substrate between electrodes to immobilize one of multiple analytes on the single strip of substrate so that each of the multiple analytes are detected simultaneously from the same sample on the single strip of substrate of the multi-array biosensor device.

Claim 25 (Cancelled).

26. (Currently Amended):

The system of Claim 14 or 15 ~~with multi-array detection~~, wherein the biosensor device is ~~as a multiple array~~ a multi-array device comprising:

a plurality of first zones on the single strip of substrate, each of the first zones having a first capture reagent with a different specificity bound to the single strip of substrate between electrodes to immobilize one of multiple analytes on the single strip of substrate so that each of the multiple analytes can be detected simultaneously from the sample on the single strip of substrate of the multi-array biosensor device by providing a constant current and measuring generated ~~voltages~~ voltage signals proportional to resistances across ~~the area of~~ each of the first zones.